ENVIRONMENTAL QUALITY

CHAPTER 8

AIR QUALITY

Sub-Chapter 4

Stack Heights and Dispersion Techniques

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17.8.401 DEFINITIONS In this subchapter, the following definitions apply:

(1) The following apply to the definition of the term "dispersion technique":

(a) "dispersion technique" means any technique which attempts to affect the concentration of a pollutant in the ambient air by:

(i) using that portion of a stack which exceeds good engineering practice stack height;

(ii) varying the emission of a pollutant according to atmospheric conditions or ambient concentrations of that pollutant; or

(iii) increasing final exhaust gas plume rise by manipulating source process parameters, stack parameters, or combining exhaust gases from several existing stacks into one stack; or other selective handling of exhaust gas streams so as to increase the exhaust gas plume rise.

(b) The term "dispersion technique" does not include:

(i) the reheating of a gas stream, following use of a pollution control system, for the purpose of returning the gas to the temperature at which it was originally discharged from the facility generating the gas stream;

(ii) the merging of gas streams when:

(A) the source owner or operator demonstrates that the facility was originally designed and constructed with such merged gas streams;

(B) after July 8, 1985, such merging is part of a change in operation at the facility that includes the installation of pollution controls and is accompanied by a net reduction in the allowable emissions of a pollutant (this exclusion from the definition of "dispersion technique" applies only to the emission limitation for the pollutant affected by such change in operation); or

(C) before July 8, 1985, such merging is part of a change in operation at the facility that included the installation of emissions control equipment or was carried out for sound economic or engineering reasons. If there was an increase in the emission limitation or, if no emission limitation was in existence prior to the merging, an increase in the quantity of pollutant actually emitted prior to the merging, the department shall presume that merging was significantly motivated by the

intent to gain emissions credit for greater dispersion. Absent a demonstration by the source owner or operator that merging was not significantly motivated by such intent, the department shall deny credit for the effects of such merging in calculating the allowable emissions for the source.

(iii) smoke management in agricultural or silvicultural prescribed burning programs;

(iv) episodic restrictions on residential solid-fuel burning and open burning; or

(v) techniques under (1)(a)(iii) above that increase final exhaust gas plume rise when the resulting allowable emissions for sulfur dioxide from the facility do not exceed 5,000 tons per year.

(2) "Good engineering practice" (GEP) stack height means the greater of:

(a) sixty-five meters, measured from the ground-level elevation at the base of the stack;

(b) either of the following:

(i) for stacks in existence on January 12, 1979, for which the owner or operator had obtained all applicable permits or approvals required by this chapter,

$$GEP = 2.5H$$

if the owner or operator produces evidence that this equation was actually relied on in establishing an emission limitation;

(ii) for all other stacks,

$$GEP = H + 1.5L$$

where:

GEP	=	good engineering practice stack height, measured from the ground-level elevation at the base of the stack,
H	=	height of nearby structure(s) measured from the ground-level elevation at the base of the stack, and
L	=	lesser dimension, height or projected width, of nearby structure(s);

however, the department may require the use of a field study or fluid model to verify GEP stack height for the source; or

(c) the height demonstrated by a fluid model or a field study approved by the department that ensures that the emissions from a stack do not result in excessive concentrations of any air pollutant as a result of atmospheric downwash, wakes, or eddy effects created by the source itself, or nearby structures or nearby terrain features.

(3) "Nearby" as used in this subchapter for a specific structure or terrain feature means:

(a) for purposes of applying the formula provided in (2)(b) of this rule, that distance up to five times the lesser of the height or the width dimension of a structure, but not greater than 0.8 kilometers (1/2 mile); and

(b) for purposes of conducting demonstrations under (2)(c) of this rule, not greater than 0.8 kilometers, except that the portion of a terrain feature may be considered to be nearby which falls within a distance of up to 10 times the maximum height (Ht) of the feature, not to exceed two miles if the feature achieves a height 0.8 kilometers from the stack that is at least 40% of the GEP stack height determined by the formula provided in (2)(b)(ii) or 26 meters, whichever is greater, as measured from the ground-level elevation at the base of the stack. The height of the structure or terrain feature is measured from the ground-level elevation at the base of the stack.

(4) "Excessive concentration" as used in (2)(c) means:

(a) For sources seeking credit for stack height exceeding that established under (2)(b), a maximum ground-level concentration due to emissions from a stack due in whole or in part to downwash, wakes and eddy effects produced by nearby structures or nearby terrain features that individually is at least 40% in excess of the maximum concentration experienced in the absence of such downwash, wakes, or eddy effects and that contributes to a total concentration due to emissions from all sources greater than an ambient air quality standard as provided in subchapter 2. For sources subject to the prevention of significant deterioration program (subchapter 8), an excessive concentration alternatively means a maximum ground-level concentration due to emissions from a stack due in whole or in part to downwash, wakes, or eddy effects produced by nearby structures or nearby terrain features that individually is at least 40% in excess of the maximum concentration experienced in the absence of such downwash, wakes, or eddy effects and greater than a prevention of significant deterioration increment. The allowable emission rate to be used in making demonstrations under this part is prescribed by the new source performance standard that is applicable to the source category unless the owner or operator demonstrates to the satisfaction of the department that this emission rate is infeasible. Where such a demonstration has been made, the department shall establish an alternative emission rate after consultation with the source owner or operator.

(b) For sources seeking credit after October 11, 1983, for increases in existing stack heights up to the heights established under (2)(b), either:

(i) a maximum ground-level concentration due in whole or in part to downwash, wakes or eddy effects as provided in (a) above, except that the emission rate specified by any applicable state implementation plan (or, in the absence of such a limit, the actual emission rate as defined in ARM 17.8.801(1)(b)) will be used, or

(ii) the actual presence of a public nuisance caused by the existing stack, as determined by the department.

(c) For sources seeking credit after January 12, 1979, for a stack height determined under (2)(b) if the department requires the use of a field study or fluid model to verify GEP stack height, for sources seeking stack height credit after November 9, 1984, based on the aerodynamic influence of cooling towers, and for sources seeking stack height credit after December 31, 1970, based on the aerodynamic influence of structures not adequately represented by the equations in (2)(b), a maximum ground-level concentration due in whole or in part to downwash, wakes or eddy effects that is at least 40% in excess of the maximum concentration experienced in the absence of such downwash, wakes, or eddy effects. (History: 75-2-111, 75-2-203, MCA; IMP, 75-2-203, MCA; NEW, 1986 MAR p. 1021, Eff. 6/13/86; AMD, 1995 MAR p. 535, Eff. 4/14/95; TRANS, from DHES, 1996 MAR p. 2285; AMD, 2002 MAR p. 1747, Eff. 6/28/02; AMD, 2003 MAR p. 645, Eff. 4/11/03; AMD, 2004 MAR p. 724, Eff. 4/9/04.)

17.8.402 REQUIREMENTS (1) The degree of emission limitation required of any source or stack for control of any air pollutant regulated under the Clean Air Act of Montana may not be affected by so much of any source's stack height that exceeds good engineering practice or by any other dispersion technique, except as provided in ARM 17.8.403.

(2) Before a new or revised state implementation plan emission limitation that is based on good engineering practice stack height that exceeds the height allowed by ARM 17.8.401 (2)(b)(i) or (ii) is submitted to the environmental protection agency, the department must provide notice and opportunity for public hearing of the availability of any demonstration study as provided by ARM 17.8.401(2)(c). Such notice and public hearing will be conducted in accordance with the Montana Administrative Procedure Act.

(3) This rule does not require a source owner or operator to restrict, in any manner, the actual stack height of any source. (History: 75-2-111, 75-2-203, MCA; IMP, 75-2-203, MCA; NEW, 1986 MAR p. 1021, Eff. 6/13/86; TRANS, from DHES, 1996 MAR p. 2285; AMD, 2003 MAR p. 645, Eff. 4/11/03.)

17.8.403 EXEMPTIONS (1) The requirements of ARM 17.8.402 do not apply to stack heights in existence or dispersion techniques implemented on or before December 31, 1970, except when pollutants are being emitted from such stacks or using such dispersion techniques by stationary sources (as defined by ARM 17.8.801(28)) that were constructed or reconstructed or for which major modifications (as defined in ARM 17.8.801(20)) were carried out after December 31, 1970. (History: 75-2-111, 75-2-203, MCA; IMP, 75-2-203, MCA; NEW, 1986 MAR p. 1021, Eff. 6/13/86; AMD, 1995 MAR p. 535, Eff. 4/14/95; TRANS, from DHES, 1996 MAR p. 2285.)